ACCESSION NR: AP4041382

phic axis, and a suitable trigonometric power series was fitted to the points. These curves differ considerably in shape from case to case. When the crystal symmetry is such that the period of the microhardness curve is 120°, the microhardness depends not only on the plane to which the scratch is parallel, but also on the direction in which it is traversed. This difference can amount to 30% in In_2Te_3. In some cases the authors plot other crystal properties together with the microhardness. Particularly striking is the agreement between the rather involved shape of the microhardness curve for the (0001) face of Bi and that of the curve relating direction and intensity of the Hall field. The addition to Bi of small quantities of Te or Pb, which oppositely affect the electron/hole ratio, distort the microhardness curve strongly and quite differently. The authors argue that it should be possible to obtain information concerning the band structure and the shape of the Fermi surface from microhardness anisotropy measurements. The authors characterize their arguments as "phenomenological" and "purely formal". Orig.art.has: 4 formulas, 4 figures and 1 table.

Card 2/3

ACCESSION NR: AP4041382

ASSOCIATION: Laboratoriya poluprovodnikovy*kh soyedinonly Akademii nauk MoldSSR
(Laboratory of Semiconductor Compounds, Academy of Sciences, MoldSSR)

SUBMITTED: 00

SUB CODE: SS, ME

NR REF SOV: 008

ENCL: 00

OTHER: 002

Card 3/3

L 65196-65   EWT(m)/EWP(w)/EWG(m)/T/EWP(t)/EWP(b)/EWA(c)   IJP(c)   RDW/JD

ACCESSION NR: AP5013930   UR/0233/65/000/001/0059/0062

AUTHOR: Lange, V. N.; Titov, V. A.

TITLE: Density and coefficient of thermal expansion of selenium containing small indium impurities

SOURCE: AN AzerbSSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk, no. 1, 1965, 59-62

TOPIC TAGS: selenium, crystal impurity, indium, crystal imperfection, specific density, thermal expansion

ABSTRACT: To check on some peculiarities in the variation of the physical properties of selenium following the addition of impurities, with special emphasis on the change in the degree of perfection of its crystal lattice, the authors investigated the variation of the density of selenium to which various amounts of indium were added. The investigated polycrystalline samples were prepared by direct melting of the components in ampoules of molybdenum glass evacuated to 10^{-3} mm Hg. The samples were kept in the molten state near 500C for 4 hours, during which the oven was vibrated to ensure thorough mixing. The substance was then slowly cooled for approximately 12 hours. Six compositions containing, 0.00, 0.01, 0.02, 0.05, 0.20, and 0.50 at.% were tested. The density was measured pycnometrically accurate to $(2-3) \times 10^{-3}$ g/cm^3. Inasmuch as the density of pure selenium was found to be

Card 1/3

L 65196-65
ACCESSION NR: AP5013430

4.54 g/cm³ as against the theoretical (x-ray diffraction) value of 4.82 g/cm³, a check was made on the variation of the coefficient of linear thermal expansion with the impurity contents. All the results are shown in Fig. 1 of the Enclosure. The coefficient of thermal expansion was measured in the interval from -70 to +20C with a DKM dilatometer. The results show that the anomaly in the density correlates with peculiarities in other properties of selenium (the maximum of the linear coefficient coincides with the minimum of the density). Tentative explanations of the results are attempted, but it is emphasized that further research is necessary. "The au-thors thank A. R. Regel' and S. I. Radautsan for a discussion of the results and for interest in the work." Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 22May64   ENCL: 01   SUB CODE: SS

NR REF SOV: 016   OTHER: 000

Card 2/3

L 65196-65

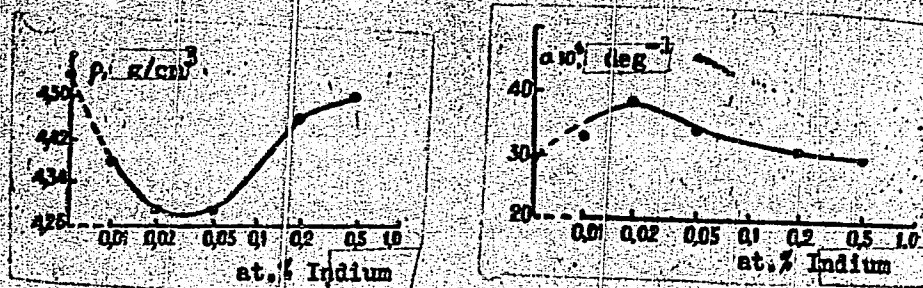ACCESSION NR; AP5013430   ENCLOSURE: 01

Fig. 1. Effect of indium impurity. Left - dependence of pycnometric density on the composition of a selenium-indium system at + 20C. Right - linear thermal expansion coefficient vs. indium content.

Card 3/3

LANGE, V.N.; LANGE, T.I.; OGANYAN, S.G.

Studying the polar anisotropy of abrasion hardness in antimony crystals by the selective etching method. Kristallografiia 10 no.2:260-262 Mr-Ap '65.   (MIRA 18:7)

1. Institut fiziki i matematiki AN Moldavskoy SSR.

L 9204-66   EWT(1)/EWT(m)/EWP(w)/T/EWP(t)/EWP(b)   IJP(c)   GG/JD

| ACC NR: AR6000123 | SOURCE CODE: UR/0058/65/000/008/E054/E055 |

SOURCE: Ref. zh. Fizika, Abs. 8E409

AUTHORS: Lange, V. N.; Lange, T. I.; Shutov, S. D.

ORG: none

TITLE: Anisotropy of microhardness

CITED SOURCE: Izv. AN MoldSSR. Ser. fiz.-tekhn. i matem. n., no. 12, 1964, 61-68

TOPIC TAGS: antimony compound, crystal property, hardness

TRANSLATION: The scratching method was used to investigate the anisotropy of the microhardness of Sb_2Se_3 crystals on the planes (100), (010), and (001). It is shown that the magnitude of the microhardness, and also the external form of the scratches, depends essentially on the direction of the scratching on the investigated face. On the (010) plane the maximum of the microhardness is observed in the scratch directions (301) and (301). An interpretation of the character of the dependence of the microhardness on the direction on the (010) face is difficult. Apparently, in Sb_2Se_3 crystals the slip occurs along the (010) plane in the (100) direction. On the (001) plane the minimum of hardness is observed close to the (100) direction, and on the (100) plane the greatest hardness is in the (010) direction, i.e., perpendicular to the emergence of the cleavage plane on the (100) face. It is also shown that in all directions the hardness in scratching decreases upon illumination, i.e., a photo-mechanical effect takes place. V. Osvenskiy.

SUB CODE: 20

Card 1/1

L 00633-67   EWT(m)/EWP(w)/T/EWP(t)/ETI   IJP(c)   RDW/JD

ACC NR: AR6017810   SOURCE CODE: UR/0058/66/000/001/E043/E043

AUTHORS: Lange, V. N.; Lange, T. I.; Titov, V. A.; Chizhevskaya, S. N.

TITLE: Influence of slight indium impurities on the physicochemical properties of selenium

SOURCE: Ref. zh. Fizika, Abs. 1E328

REF SOURCE: Sb. Materialy dokl. 1-y Nauchno-tekhn. konferentsii Kishinevsk. politekhn. in-ta. Kishinev, 1965, 70

TOPIC TAGS: selenium, indium, thermal expansion, solid solution, crystal impurity, impurity center, physical chemistry property

ABSTRACT: To clarify the question whether the impurity atoms in Se are actually grouped together, measurements were made of the density, and coefficient of thermal expansion of alloys of the Se-In system, and also the viscosity of the corresponding melts. It is established that the variation of these properties with increasing In concentration is a complicated one. The data obtained, in the opinion of the authors, confirm the hypothesis that groups of In atoms are formed, and also indicate that the atoms (complexes) of In arrange themselves in chains made up of selenium atoms, and do not dispose themselves between them. [Translation of abstract]

SUB CODE: 20, 11

Card 1/1   pb

L 05907-67   EWT(m)/EWP(t)/ETI   IJP(c)   JD

ACC NR: AR6017479   SOURCE CODE: UR/0137/66/000/001/A008/AC08

AUTHOR: Lange, V. N.; Lange, T. I.; Titov, V. A.; Chizhevskaya, S. N.

TITLE: Effect of indium impurities on the physical and chemical properties of selenium

SOURCE: Ref. zh. Metallurgiya, Abs. 1A53

REF SOURCE: Sb. Materialy dokl. 1-y Nauchno-tekhn. konferentsii Kishinevsk. politekhn. in-ta. Kishinev, 196, 70

TOPIC TAGS: indium, selenium, indium containing alloy, selenium base alloy

ABSTRACT: The density and coefficient of thermal expansion of alloys in the Se-In system are measured as well as the viscosity of the corresponding melts to determine whether grouping of impurity atoms in selenium actually takes place. It is found that these characteristics change in a complex manner as the indium concentration is increased. The authors feel that the resultant data confirm the hypothesis of grouping of indium atoms and also indicate that the indium atoms (complexes) are incorporated in chains made up of selenium atoms rather than being distributed among them. (From RZh Fiz.) [Translation of abstract]

SUB CODE: 11, 20

Card 1/1   KH   UDC: 669.776'872-154:541.6

LANGE, V. Ya.   In Latvian

LANGE, V. Ya. -- "Occurrence of June Berry (Amelanchier Med.) on the Territory of the
Latvian SSR. Latvian Agricultural Academy, 1947 In Latvian (Dissertation for the
Degree of Candidate of Agricultural Sciences)

SO: Izvestiya Ak. Nauk Latviyskov SSR, No. 9, Sept., 1955

ACCESSION NR: AP3003625   P/0046/63/008/002/0129/0138

AUTHOR: Malinowska, Apolonia; Lange, Wieslawa

TITLE: Effect of hydrogen atoms and hydroxyl radicals produced in
electric discharges on the condition of an aluminum surface (The
influence of hydrogen atoms and hydroxyl radicals in the sphere of
electric discharges on the aluminum surface condition)

SOURCE: Nukleonika, v. 8, no. 2, 1963, 129-138

TOPIC TAGS: electric discharge corrosion chemisty, aluminum surface
corrosion, RF discharge corrosion, hydroxyl radical, hydrogen atom,
RF discharge

ABSTRACT: A study has been carried out to determine the effect of
hydrogen atoms and hydroxyl radicals formed during electric discharges
in the presence of water vapor, as well as other vapors, on the quality
of the protective layer covering an aluminum surface. Change in the
breakdown voltage was used as the indicator of point-corrosion changes
in the metal surface. The samples were 25- by 50-mm sheet aluminum
plates heated for 6 hr at 490C. After slow cooling they were degassed

Cord 1/2

ACCESSION NR: AP3003625

with benzene and coated with methyl polymethacrylate, leaving an ex-
posed area 24 by 24 mm. After 24 hr in a dessicator, they were ex-
posed to aqueous solutions of various reagents: 3% Na_2SO_4 with
0.1% CH_3COOH, H_2O_2, H_3PO_4, or HCOOH. These reagents were completely
vaporized under experimental conditions. Pressure in the discharge
tube was kept at 2—10 mm Hg, and RF discharges with a frequency of
10.6 kc with a voltage of 29.7 kv were produced between the plate and
a 5-cm-wide silver coating on the outer surface of the tube by a
Tesla transformer. In the presence of hydroxyl radical acceptors
HCOOH and CH_3COOH, the breakdown potential decreased, while in the
presence of water vapor. H_3PO_4, and H_2O_2, the hydroxyl radicals led
to an increased passivity of the surface reflected by an increased
breakdown potential. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Warsaw University, Department of Physical Chemistry,
Warsaw

SUBMITTED: 01Nov62   DATE ACQ: 19Jul63   ENCL: 00

SUB CODE: CH   NO REF SOV: 001   OTHER: 011

Card 2/2

KARDASHOV, David Alekseyevich. Prinimal uchastiye LANGE, Yu.V.;
        VENKOVA, Ye.S., red.

        [Synthetic adhesives] Sinteticheskie klei. Moskva, Izd-
        vo "Khimiia," 1964.   494 p.   (MIRA 17:6)

LANGE, (u.V.

Subject	:	USSR/Electricity
Card 1/1		Pub. 27 - 10/30
Author	:	Lange, Yu. V., Eng., Moscow
Title	:	Ultrasonic resonance testing method
Periodical	:	Elektrichestvo, 1, 48-53, Ja 1955

AID P - 1286

Abstract : The author describes the method of nondestructive testing based on ultrasonic vibrations of continuously varying frequency. This method is widely used in industry. Several instruments for thickness measurements (up to 20 mm) or for flaw detection have been introduced. The author finds the best conditions of performance of the testing instruments and introduces a "coefficient of range" as a ratio of minimum to maximum fundamental longitudinal vibrations. The accuracy of measurements is improved when this ratio is as low as possible. Five photographs and diagrams, 5 references (1945-53), 1 Russian, 1953).

Institution : None

Submitted : Mr 9, 1954

TEUMIN, Isay Il'ich; SHRAYBER, D.S., kand.tekhn.nauk, retsenzent;
LANGE, Yu.V., inzh., red.;TAIROVA, A.L., red.izd-va; EL'KIND,
V.D., tekhn.red.

[Supersonic vibratory systems] Ul'trazvukovye kolebatel'nye
sistemy. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.
lit-ry, 1959. 330 p.   (MIRA 12:3)
                         (Vibration)

Defektoskopiya metallov; sbornik statey (Flaw Detection in Metals; Collection of Articles) Moscow, Oborongiz, 1959, 450 p. Errata slip inserted. 4,550 copies printed.

Ed.: G. Sensov, Candidate of Technical Sciences; Ed.: M.M. Lazarukova; Tech. Ed.: V.P. Boranin; Managing Ed.: A.S. Zaytsornkov, Engineer.

PURPOSE: This book is intended for engineers and technicians in the field of nondestructive inspection and testing of metal.

COVERAGE: This collection of articles deals with methods of nondestructive inspection and testing of metals. Results of investigations conducted at scientific research institutes and plants of magnetic, electrical, X-ray, ultrasonic, and fluorescent-penetrant methods of flaw detection are described. Detailed descriptions of flaw-detection methods and equipment are presented. Data are given on the status of the development of flaw detection methods in non-Soviet countries. No personalities are mentioned. References follow several of the articles.

25 (6)
AUTHOR: Lange, Yu. Y., Engineer   SOV/119-59-6-11/18

TITLE: A New Acoustic Method of Detecting Defects and Some Results of
             Its Application (Novyy akusticheskiy metod defektoskopii i
             nekotoryye rezul'taty yego primeneniya)

PERIODICAL: Priborostroyeniye, 1959, Nr 6, pp 23 - 25 (USSR)

ABSTRACT: The principle of the method mentioned in the title is based on
             the measurement of the mechanical resistance on a point of the
             surface under investigation by means of the reaction on the
             feeler which excites elastic vibrations in the test sample.
             This principle was applied for the first time by Professor A.
             V. Rimskiy-Korsakov (Acoustics Institute of the AS USSR) for
             the measurement of mechanical resistances in his investigation
             of vibration. The method suggested by the author mainly serves
             for the detection of gluing or soldering defects. Figure 1
             shows the scheme of the testing instrument which consists of
             two piezoelements and one feeler. The vibration range of the
             instrument is between 2 and 7 kilocycles. The first piezoele-
             ment serves as sound emitter, the second is connected to an
Card 1/2   amplifier and reacts on the mechanical impedance of the object
             under investigation. This impedance is relevant if there is a

A New Acoustic Method of Detecting Defects and Some   SOV/119-59-6-11/18
Results of Its Application

> good bond of the soldering or gluing material with the base
> material; it decreases, however, on those spots where there is a
> gluing or soldering defect, where the upper layer rests on
> loosely, and vibrates on its own. Defects of some square mil-
> limeters of the surface are well determinable. There are 2 fig-
> ures.

Card 2/2

28 (5)

AUTHOR: Lange, Yu. V.   SOV/32-25-7-20/50

TITLE: Decrease of the Dead Zone in the Control by Means of the Ultra-
               sonic Echo Method (Umen'sheniye mertvoy zony pri kontrole ul'-
               trazvukovym ekho-metodom)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 828 - 829
               (USSR)

ABSTRACT: A considerable drawback of the detection of defects in material
               according to the ultrasonic echo method is the so-called "dead
               zone" in which no defect can be observed. A reduction of this
               zone can be achieved in such a way as to conduct ultrasonic
               waves from two opposite sides into the test object. For this
               purpose a crack detector is used for which a movable time mark
               is used in the depth indicator and the distance from the re-
               flecting surface thus can be measured. An appliance of this
               kind is the crack detector V4-7I (Ref) in which a point impulse
               is used as a time mark. Its polarity is opposite with regard to
               the echo signal. The described reduction of the dead zone cannot
               be carried out by means of appliances of a depth measuring system
               (as for example UZD-7N or foreign appliances) other than that of
Card 1/1   V4-7I. There are 1 figure and 1 Soviet reference.

28 (5)
AUTHOR: Lange, Yu. V.   SOV/32-25-7-22/50

TITLE: New Methods for Applying Elastic Oscillations for the Detection
              of Defects in Material (Nekotoryye novyye primeneniya uprugikh
              kolebaniy v defektoskopii)

PERIODICAL: Zavodskaya laboratoriya, 1959 Vol 25, Nr 7, pp 833 - 836
              (USSR)

ABSTRACT: The mechanic resistance of the test object observed during the
              application of the ultrasonic resonance method, can be used for
              the detection of defects in material, since the sender (S) of
              the resonance appliance reacts to a change of the mechanic re-
              sistance. This, however, only holds good in a few special cases.
              The new acoustic testing method for adhesive and soldering con-
              nections, offering wider possibilities of application, uses
              lower sound frequencies, opposite to the resonance method. A
              rod is used as (S) which causes elastic oscillations in the
              test object. At the same time the mechanic resistance is mea-
              sured from the reaction power of the object to (S), and the
              method is therefore called "reaction method". Professor A. V.
              Rimskiy-Korsakov (Akusticheskiy institut Akademii nauk SSSR)
Card 1/2   (Institute for Acoustics of the Academy of Sciences, USSR) for

New Methods for Applying Elastic Oscillations for the   SOV/32-25-7-22/50
Detection of Defects in Material

the first time used this measuring principle for vibration
investigations. The measuring method in principle consists
of the fact that the (S), contacting the intermediate layer
over a faulty point (Fig 1), receives a smaller "reaction
power" than that over a faulty point (the greater this dif-
ference, the more reliable the determination). The graph of
the applied (S) (Fig 2) shows that it contained a piezoele-
ment of barium titanate. The (S) can work within the scope
of frequencies of 2000 - 7000 cycles. After an explanation
of the measuring method it is found that the gluing of ma-
terials with a lower modulus of elasticity cannot be tested
according to the described method. The present tests were
carried out with standard appliances, a sound generator
7G-10 and amplifyer 28-IM; different kinds of gluings were
examined. The method can also be used for testing adhesive
layers of bimetallic connections. There are 2 figures and
1 Soviet reference.

Card 2/2

28 (5)

AUTHORS: Shrayber, D. S., Lange, Yu. V.   SOV/32-25-7-24/50

TITLE: Ultrasonic Detection of Defects in Materials Abroad (Ul'traz-
              vukovaya defektoskopiya za rubezhom). (A Survey of Foreign
              Publications) (Obzor inostrannoy literatury))

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 839 - 850
              (USSR)

ABSTRACT: A general survey is given of the development of the detection
              of defects on materials abroad, mainly as far as the impulse
              echo method is concerned and also the shadow method and re-
              sonance method, and some comparisons with the corresponding
              investigations in the USSR are given. In the USSR as well as
              abroad, waves other than longitudinal have been used more and
              more frequently in recent times (transversal, surface and normal
              waves). The application of the immersion method in the ultra-
              sonic echo detection possesses several advantages compared to
              other methods. Some foreign appliances for the ultrasonic de-
              fect detection are described, and the control of defects in
              material (MC) by means of those appliances is explained. A
              paragraph is then devoted to the (MC) according to the shadow
Card 1/2   method, in which among other things the application of normal

Ultrasonic Detection of Defects in Materials Abroad.   SOV/32-25-7-24/50
(A Survey of Foreign Publications)
                    waves is explained as well as the (MC) by means of tubes ac-
                    cording to the immersion method. In the descriptions regarding
                    the resonance method, it is also mentioned that in the USSR a
                    direct reading of the thickness is carried out in the investi-
                    gation of layers, by means of special measuring devices (Refs
                    32, 33). The (MC) methods with regard to adhesive connections,
                    finder caps (piezoelectric transformers) and characteristics
                    of the ultrasonic method for (MC) are explained in separate
                    paragraphs, and some data of publications and diagrams are
                    given. There are 15 figures and 48 references, 16 of which are
                    Soviet.

Card 2/2

IANGE, Yu.V.

Some characteristics of the acoustic impedance method of
flaw detection. Zav.lab. 26 no.7:842-847 '60.

(MIRA 13:6)
(Ultrasonic testing) (Impedance (Electricity))

21896

S/193/61/000/005/006/006
A004/A104

I.9600   also 1063, 1160

AUTHOR: Lange, Yu. V.

TITLE: Acoustic impedance ИАД-1 (IAD-1) flaw detector

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 5, 1961, 47-48

TEXT: The IAD-1 flaw detector, designed by some (not named) Scientific Research Institutes and fabricated by the Kishinev "Elektrotochpribor" Plant is intended for the detection of defects in multi-layer glued and soldered structures. The device is based on the acoustic impedance control method (which up to 1960 was called "reaction method") utilizing the dependence of the full mechanical resistance measured from the part surface (mechanical impedance) on the presence of adhesion between the elements of the structure being checked. The mechanical impedance is determined by the amplitude of the part reactive power on the oscillating pickup being in contact with it. The illustration shows the block diagram of the flaw detector. Piezoelement 1 excited by the voltage of sound generator 2 emits elastic oscillations to rod 3 made of organic glass ("orgsteklo"). Steel cylinder 4 increases the effectiveness of emission. On the opposite end of rod 3 force-measuring piezoelement 5 is mounted. The

Card 1/2

Acoustic impedance ИАД-1 (IAD-1) ...

21896
S/193/61/000/005/006/006
A004/A104

voltage on piezoelement 5 is proportional to its deformation and, consequently, to the reactive power causing this deformation. Piezoelement 5 is connected to amplifier 6 charged on dial indicator 7 and relay unit 8. The pickup is in contact with the part via contact finger 9. The absence of adhesion between the sheathing and the remaining elements of the structure being checked causes a decrease in the mechanical impedance which is determined by the reduction of the signal level at the amplifier output. In this way the flaw is detected by a decrease in pointer deviation of output indicator 7. Simultaneously relay unit 8 starts operating switching on indicating lamp 10 located in the pickup. The operating frequency of the IAD-1 flaw detector covers a range of 1-8 kc. The device weighs about 8 kg, and is supplied from the 220 v a-c mains. The required power is 110 v-amp. The thickness limit of the sheathing which still yields good results is 1.5 mm for duralumin and 2-2.5 mm for glass-textolite.' There is 1 figure.
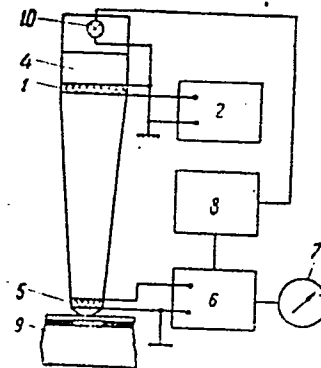
Card 2/2

BR

ACCESSION NR: AT4013979   S/3070/63/000/000/0094/0097

AUTHOR: Lange, Yu. V.; Gol'den, A. D.; Yakovis, S. L.

TITLE: The IAD-2 defectoscope for inspection of joints by the acoustic impedance method

SOURCE: Novy*ye mashiny*i pribory* dlya ispy*taniya metallov. Sbornik statey. Moscow, Metallurgizdat, 1963, 94-97

TOPIC TAGS: acoustic impedance defectoscope, defectoscope, mechanical impedance, joint inspection, metal joint

ABSTRACT: One of the most universal and effective methods for inspection of glued, soldered, and thermo-diffusion joints in multilayer structures is the acoustic impedance method. This method is based on evaluation of the mechanical impedance of an article on excitation of flexural vibrations in it, and is successfully and widely used in industry for detection of defective joints between the skin and and rigid elements (spar, rib, etc.) or fillers (foam layer, honeycomb). Inspection is by the IAD-1 defectoscopes, an experimental

Card 1/6

ACCESSION NR: AT4013979

series of which was produced by the "Elektrotochpribor" plant in 1960. The authors have now developed the IAD-2 acoustic impedance defectoscope, an improved version of IAD-1. The block diagram of the IAD-2 is shown in Fig. 1 of the Enclosure. The sound generator 1 feeds the piezoelectric element 2 which excites elastic vibrations in the bar 3 of the pick-up. At the lower end of the bar, the force-measuring piezoelectric element 4 is located and connected to the input of amplifier 5. The pick-up touches the article to be inspected through contact tip 6. When the pick-up is not pressed against the article, the force acting on the piezoelectric element 4 is determined only by the inertia resistance of the contact tip, which is small due to the small mass of the tip and the relatively low frequency used. Therefore, in that condition, the electric potential of the element is close to zero.   This potential increases substantially when the pick-up exerts pressure on the article. At the same exerted pressure, the potential increase is greater at higher values of mechanical impedance of the article at the contact point with the pick-up. A defect of a connection inside the article causes a sharp decrease of mechanical impedance, and therefore of the potential of the force-measuring piezoelectric element. Potential variations of the sensor are indicated by an electric dial gage 7 at the output of an amplifier 5.

Card   2/6

ACCESSION NR: AT4013979

At a certain low value of the dial indication, relay 8 switches on the signal lamp 9. The defectoscope IAD-2 works with a pick-up of the type DI-1 (Fig. 2 of the Enclosure). The emitting 1 and force-measuring 2 piezoelectric elements are of barium titanate. The sound-conducting bar 3 is of organic glass and has the form of a truncated cone. A steel cylinder 4 serves as a relecting mass and increases the effectiveness of the emitting piezoelectric element 1. The contact tip 5 is of wear-resistant hardened steel ShKh15 with a radius of curvature of 20 mm. In bar 3, near the emitter, a shield 6 cuts the capacitative coupling between elements 1 and 2. Shielded leads 7 connect the pick-up to the defectoscope, and are protected and supported by a steel coil spring 8. A brass ring 9 protects the element 2 from mechanical damage and shields it from electrical distur-bances. A signal lamp 10 is housed in the body 11 of the pick-up. The fundamental electrical scheme has been described by the authors in detail. The range of frequencies of the sound generator in the defectoscope is 1 to 8 kilocycles/sec. The IAD-2 defectoscope can be used as part of a semi-automatic installation for mechanized inspection, with recording of the results on thermoelectric paper. The defectoscope is fed from a 220-volt supply circuit, and the power requirement does not exceed 100 W. The weight is 11 kg. During

Card 3/6

ACCESSION NR: AT4013979

inspection of joints, the operator moves the pick-up smoothly, pressing its tip lightly against the surface of the inspected article. The presence of a defect is reported by a signal light installed in the pick-up. The possibilities of the acoustic impedance method of inspection, and the tuning procedures for instruments, have already been discussed in the literature by Yu. V. Lange (Zavodskaya Laboratoriya, XXVI, 7 842(1960)). Laboratory and production tests carried out with the IAD-2 defectoscope have shown its considerable advantages over the IAD-1. For example, inspection of honeycomb sandwich panels having a thin (0.25 mm) duraluminum skin and large honeycomb (side=6mm) cells, when performed with the IAD-1, defectoscope,is possible only when a special and inconvenient pick-up is applied. With the IAD-2, the same task can be performed with a standard pick-up. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 02

SUB CODE: MM, EE

NO.REF SOV: 002

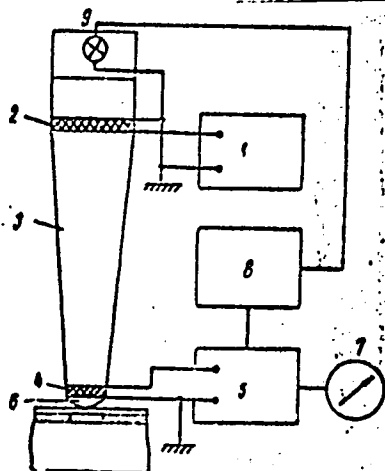OTHER: 000

Card   4/6

ENCLOSURE: 01

Fig. 1. Block Diagram of the Acoustic Impedance Defectoscope

(1) sound generator, (2) piezoelectric element (sound emitter), (3) sound-conducting bar,
(4) piezoelectric element (dynamometer), (5) amplifier, (6) contact tip, (7) electric
dial gage, (8) relay, (9) signal lamp

Card 5/6
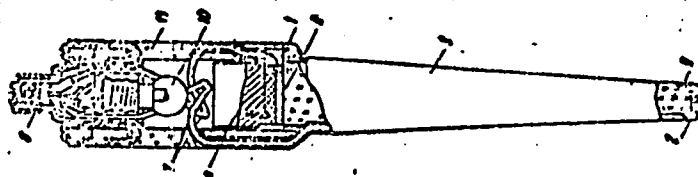
Fig. 3. Schematic illustration of Pick-up

(1) sound-emitting piezoelectric element, (2) force-transducing piezoelectric element, (3) sound-conducting bar, (4) reflector, (5) contact tip, (6) shield, (7) shielded leads, (8) external support and protection coil, (9) brass ring, (10) signal lamp, (11) body

Card 6/6

LANOS, Eu.T.

    New characteristics of the acoustical impadance method of flaw
    detection. Defektoskopiia no.33z1-53 '65.
                                                        (MIRA 18:6)

L 13601-66   EWT(d)/EWT(m)/EWP(c)/EWP(v)/EWP(j)/T/EWP(t)/EWP(k)/EWP(b)/EWP(1)/

ACC NR: AP6001017   (A)   ETC(m)   SOURCE CODE: UR/0286/65/000/022/0103/0103
RM/JD

AUTHOR: Lange, Yu. V.

ORG: none

TITLE: Flaw detector for inspection of nonmetallic films. Class 42, No. 160612

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 103

TOPIC TAGS: flaw detector, glass coating, plastic coating

ABSTRACT: This Author Certificate presents a flaw detector for inspecting nonmetallic films, multilayer constructions, and other parts, e.g., glass plastics, by the method of free vibrations. The flaw detector contains an electromechanical vibrator, an elastic vibration receiver, electric band-pass filters, amplifiers, and detectors. To increase the inspection reliability, a two-channel circuit is connected in the receiver circuit. A filter with a pass band, corresponding to the frequencies of the vibration maximum of the part in the region of the flaw, is placed in one channel. To measure the ratio of the signal amplitudes, a ratiometer operating from the detectors connected at the outputs of each channel is used.

SUB CODE: 13/   SUBM DATE: 06Feb63

Card 1/1

L 24822-66   EWT(d)/EWT(m)/EWP(v)/EWP(j)/T/EWP(k)/EWP(h)/EWP(l)/ETC(m)-6

ACC NR: AP6006955   IJP(c) (N) WW/RM   SOURCE CODE: UR/0381/65/000/006/0061/0068

AUTHORS: Lange, Yu. V.; Filimonov, S. A.; Shishkina, N. V.; Pakhomov, V. V.; Veremeyenko, S. V.; Pyrkov, B. Ye.

ORG: none

TITLE: UVFD-1 defectoscope for controlling multilayered structures and nonmetallic parts

SOURCE: Defektoskopiya, no. 6, 1965, 61-68

TOPIC TAGS: defectoscope, diagnostic instrument, electric device, electronic circuit /UVFD-1 defectoscope

ABSTRACT: The block diagram and detailed electric circuitry of a UVFD-1 defecto-scope are given. Referring to Fig. 1,

Fig. 1.   Block diagram of a UVFD-1 defectoscope.
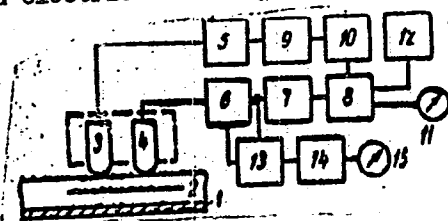
UDC: 620.179.16

Card 1/2

L 24822-66

ACC NR: AP6006955

the defectoscope consists of: 1 - metallic base, 2 - nonmetallic film deposit, 3 - emitting oscillator, 4 - receiving oscillator, 5 - generator to feed power to the vibrator, 6 - amplifier, 7 - shaper, 8 - phase-measuring circuit, 9 - phase regulator, 10 - shaper, 11 - needle indicator, 12 - relay instrument, 13 - detector for automatic regulating of amplification, 14 - amplitude measuring device, and 15 - indicator. The instrument has four types of scanner heads that operate on a frequency range 25--60 kcycle. A sketch is included for one such scanner head connected to the instrument by a coaxial cable. The instrument weighs 11 kg and is portable. It is used in conjuction with automatic recorders and is very useful for controlling nonmetallic film deposits on metallic bases and for identifying defects between the joints of multilayer structures. Orig. art. has: 4 figures.

SUB CODE: 14, 09/ SUBM DATE: 16Jun65/ ORIG REF: 005

Card 2/2

L 06073-67   EWT(d)/EWT(m)/EWP(c)/EWP(v)/EWP(j)/EWP(k)/EWP(l)   IJP(c)   RM

ACC NR: AP6019019   (N)   UR/0032/66/032/001/0034/0038

AUTHORS: Lange, Yu. V.; Shishkina, N. V.

ORG: none

TITLE: A study of the performance characteristics of the ultrasonic velocimetric method of flaw detection

SOURCE: Zavodskaya laboratoriya, v. 32, no. 1, 1966, 34-38

TOPIC TAGS: ultrasonic flaw detector, laminated plastic, elastic wave, lamination, phase meter, performance test/ UVFD-1 ultrasonic flaw detector

ABSTRACT: The results of experimental studies of the performance of the UVFD-1 velocimetric flaw detector are given. The probe head, which contains transmitting and receiving vibrators with a fixed distance ℓ between them, is placed on the surface of the article (see Fig. 1). The elastic flexural wave from the transmitting vibrator is propagated with velocity v, which is a function of the layer thickness. The propagation velocity in a flaw is lower than in a segment without a flaw. This changes the phase of the wave. Laboratory tests were made with an M001 galvanometer and an N-700 loop oscillograph. Tests were made with PT sheet textolite of 1360 x 740 x 10 mm. The velocimetric method can be used to detect laminations and fracture zones at a depth of up to 26 mm in laminated plastics and in structures containing nonmetallic layers.

Card 1/2   UDC: 620.179.16

L 06073-67

ACC NR: AP6019019
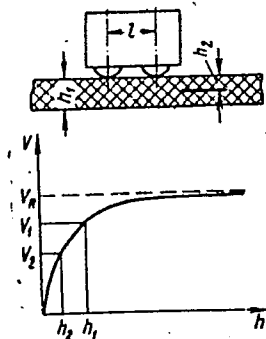
Fig. 1. V_R - limiting (surface-wave) velocity;
V_1 - propagation velocity for h_1; V_2 - propagation
velocity for h_2.

Orig. art. has: 5 graphs and 4 formulas.

SUB CODE: 14, 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2 *egk*

LANGE, Z.

"Production of Impregnated Felts." p.204
"Important Decision of the Presidium of the Government." p.207
(ODZIEZ Vol. 4, no. 10, Oct. 1953 Lodz, Poland)

SO: Monthly List of East European Accessions, LC, Vol. 3, no. 5, May 1954/Uncl.

LANGE, Z.

"Feltmaking Machines in the Felt Industry."   p. 46, (ODZIEZ, Vol. 5,
No. 3, Mar. 1954. Lodz, Poland.)

SO: Monthly List of East European Accessions, (EEAL), LC,
Vol. 3, No. 12, Dec. 1954, Uncl.

PAGE, 2

Mixing raw materials in the felt industry. p. 70. (MOTORYZACJA, Vol. 5, No. 4, Apr. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (MEAI), LC, Vol. 3, No.12, Dec. 1954. Uncl.

LANGE, Z.

Carding machines in the felt industry. (MOTORYZACJA, Vol. 5, No. 9, Sept. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No.12, Dec. 1954, Uncl.

LANGE, Z.

"Serrate covers applied in the felt industry, their tightening, polishing, and cleaning.". p. 203. (ODZIEZ. Voll 5, No. 11, Nov. 1954. Ledz, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4. April 1955. Uncl.

LANGE, Z.

Manufacture of felt hats. (Conclusion) p. 76.
ODZIEZ, Lodz, Vol. 6, no. 4, Apr. 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955,
Uncl.

LANGE, Z.

Equipment for dyeing felt products. p 114

ODZIEZ

LODZ

VOL. 6, no. 6   June 1955

SOURCE: East European Accessions List (EEAL) LC Vol. 5, no. 3 March 1956

LANGE, Z.

Production of felt hats; shaping hats.   p. 187

Vol. 6, no. 9, Sept 1955
ODZIEZ
Lodz

SOURCE: Monthly list of East European Accessions (EEAL)   LC   Vol. 5, no, 2
February 1956

LANGE, Z.

Reduction of prime costs in the felt industry for the 1st half of 1955. p. 274.
Vol 6, no. 12, Dec. 1955. ODZIEŻ. Lodz, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

LANGE, Z.

Bleaching wool and felt products.   P. 75
ODZIEZ. (Centraine Zarzady Przemyslu Dziewiarskiego, Odziezowego
i Ponczoszniczego) Lodz.
Vol. 7, no. 3, Mar. 1956

SOURCE: EEAL LC   Vol. 5, no. 7, July 1956

La..t, Z.

Manufacture of felt hats; metalizing. (to be contd.) p. 135

Odlez   vol. 7, no. 4, Apr. 1956

Poland

so.   EAST EUROPEAN ACCESSIONS LIST   vol. 5, no. 10   Oct. 1956

LANGE, Z.

LANGE, Z. Production of woolen hats. p. 188

Vol. 7, no. 7, July 1956
ODZIEZ
TECHNOLOGY
Warszawa, Poland

So: East European Accession, V ol. 6, no. 2, 1957

LANGE, Z.

LANGE, Z. Dyeing of loose wool for the production of hunting, sport, and tourist
hats. p. 213. Vol. 7, no. 8, Aug. 1956. ODZIEZ. Lodz, Poland.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL. 6, NO. 4--APRIL 1957

LANGE, Z.

LANGE, Z. Production of hair hats.   (Conclusion) p. 299. Vol. 7,.no. 11,
Nov. 1956. ODZIEZ. Ledz, Poland.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

LANGE, Z.

Geozit, a very strong felt made of various wastes. p. 190.
(ODZIEZ. Vol. 8, no. 7, July 1957, Lodz, Poland)

SO: Monthly List of East European Accessions (EEAL) LC· Vol. 6, No. 12, Dec. 1957.
       Uncl.

Lange, Z.

The felt industry in the 1959-1965 Plan. p. 41

ODZIEZ. (Centraine Zarzady Przemyslu Dziewiarskiego, Odziezowego i
Ponczoszniczego) Lodz, Poland.   Vol. 10, no. 2, February 1959

Monthly list of East European Accession (EEAI) LC, Vol. 8, no. 7, July 1959

Uncl.

KARPOV, A.A., inzh.; KUSTOBAYEV, G.G., inzh.; LAUSHKIN, N.P., inzh.;
    LANGE, Z.I., inzh.; NOSYREVA, M.D., inzh.; SAVEL'YEV, G.V., inzh.;
    SHCHULEPNIKOV, I.S., inzh.; Prinimali uchastiye: SYCHKOV, B.A., inzh.;
    MILIKHIN, A.Ye., inzh.; ZAYTSEV, R.A., inzh.; ZARZHITSKIY, Yu.A.,
    inzh.; LEONT'YEV, A.I., inzh.; VIKTOROVA, T.Ye., inzh.; SERIKOV, A.A.,
    inzh.

Operation of recuperator soaking pits in the 1150 MMK rolling
mill. Stal' 22 no.8:753-758 Ag '62.   (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
            (Furnaces, Heating)   (Rolling mills)

LANGEL'D, F. K·

LANGEL'D, F. "Susceptibility of Varietal Grain Sorghums to Smut," Sotsialisticheskoe Zernovoe Khoziaistvo, no. 1, 1935, pp. 157-159. 59.8 So72

SC: SIRA SI 90-53 15 December 1953

COUNTRY   : USSR   M-4
CATEGORY   :

ABS. JOUR. : RZBiol., No. 19   1958, No. 86994

AUTHOR   : Langel'd, F. K.
INST.   :
TITLE   : Depth of Plowing for Spring Wheat in the
             Fallowing-Intertilling Rotation System of the
             South-East Brown Soil Zone.
ORIG. PUB. : S. kh. Povolzh'ya, 1957, No 2, 32-35

ABSTRACT   : In the brown soil zone of the South-East, in
contrast with the chernozem zone, spring wheat shows little
response to aftereffect of deep plowing. Under these con-
ditions the system of plowing to different depths must
include deep autumn plowing directly for the spring wheat
and not for a crop that precedes it. Formation of a sub-
tillage layer in varying depth plowing is an effective
means of improving the texture and fertility of the soil.
                                        Yu. L. Guzhev.

CARD: 1/1

COUNTRY   : USSR
CATEGORY   : CULTIVATED PLANTS. General Problems.

ABS. JOUR.   : Ref Zhur - BIOLOGIYA, NO. 4, 1959; No. 15556

AUTHOR   : Langel'd F.K.
INST.   :
TITLE   : Pure and Occupied Fallow Grounds in the Zone
               of Chestnut Soils.

ORIG. PUB.   : S. kh. Povolzh'ya, 1957, No.7, 50-53

ABSTRACT   : The problem of prospects of occupied fallow
               lands in the chestnut soil zone is elucidated,
               in particular the rye-hay fallow.

CARD: 1/1

LANGEL'D, F.K., kand.sel'skokhoz.nauk

What is valuable for the Southeast in the Mal'tsev tillage system.
Zemledelie 6 no.8:23-26 Ag '58.   (MIRA 11:11)
                    (Volga Valley--Tillage)

LANGEN, A. M.

LANGEN, A. M. -- "Certain Systems of Operation of Synchronous Reactor-
Starting Motors." Sub 11 Jun 52, Moscow Order of Lenin Power Engineering
Inst Imeni V. M. Molotov.   (Dissertation for the Degree of Candidate
in Technical Sciences).

SO: Vechernaya Moskva, January-December 1952

LANGEN,A.; ONATSEVICH,M.

Electric motors for tape recorders. Radio no.9:38-41 S'55.

(Magnetic recorders and recording)   (MIRA 8:11)

LANGEN, A

USSR/ Electricity - Motors

Card 1/1   Pub. 89 - 20/30

Authors   :   Langen, A., and Onatsevich, M.

Title   :   The DAG-1 electric motor in a magnetic tape recorder

Periodical :   Radio 1, 43 - 44, Jan 56

Abstract   :   The single-phase asynchronic motor with a short-circuited loop at one pole,
                known as the DAG-1 used for driving the turntable of record players, is
                recommended for driving the mechanism of magnetic tape recorders. The
                electrical characteristics of this motor are given in detail. As the
                operation of the motor is not smooth enough for rewinding purposes, methods
                are proposed for making its action smoother; and these are explained in all
                their technical details. Illustrations; diagrams; graph; table.

Institution :   ......

Submitted   :   ......

LAIGEN, A.N. kandidat tekhnicheskikh nauk.

Calculation of motors with a short-circuited turn on the pole.
Vest.elektroprom. 27 no.9:31-38 S '56.   (MIRA 10:9)

1. Vsesoyuznyy nauchuo-issledovatel'skiy institut zvukozapisi.
                    (Electric motors, Induction)

LANGEN, A.M., kandidat tekhnicheskikh nauk.

Determining the maximum allowable pull-in torque if reluctance motors.
Vest.elektroprom.27 no.12:54-58 D '56.   (MIRA 10:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi.
              (Electric motors, Synchronous)

LANGEN, A.M.

6(5)

PHASE I BOOK EXPLOITATION   SOV/1930

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi

Trudy...Vyp. 2. (Transactions of the All-Union Sound-recording
Scientific Institute) Nr 2. Moscow, 1957. 164 p. Errata slip
inserted. 1,000 copies printed.

Editorial Board: L.P. Apollonova, V.S. Vaymboym, D.P. Vasilevskiy,
A.A. Trublevskiy, S.A. Gribkova, L.O. Grigoresh, B.Ya. Kaznachey,
V.I. Parkhomenko, L.A. Fuseet, Ye.I. Ragirer, M.A. Rozenblat;
Tech. Ed.: S.A. Gribkova.

PURPOSE: This collection of articles may be useful to scientists,
engineers, specialists,and technicians dealing with sound-recording
techniques.

COVERAGE: The articles are the results of research carried out at
VNAIZ in 1954-1955. Most of the articles deal with magnetic
recording, both for the recording of sound as well as for fixing
various physical processes on tape, wire, disc, or drum. References
appear separately after each article.

Kolpanovskaya, L.O. Magnetic Discs   79
In connection with the NDD-54 dictaphone developed by VNAIZ,
research and development work was carried out at the Insti-
tute on magnetic discs. The author discusses in detail the
production of magnetic discs. She thanks Candidate of
Technical Sciences F.M. Kozlov and Senior Scientific Worker
L.A. Trifonova for their assistance. There are 14 references:
2 English, 3 German, 1 Polish, 1 Indian,and 1 Soviet.

Smirnov, V.S. The NDD-54 Disc-type Dictaphone   87
The article briefly describes the NDD-54 dictaphone (VNAIZ),
used for sound recording on magnetic discs. The author
lists the basic technical characteristics of this equipment.
There are no references.

Smirnov, V.S. A Contact Copying Machine for Mass-copy MKTM-1- 90
Magnetic Tape Recorders
This magnetic tape-copying machine was developed by VNAIZ,
and after a long period of production it was redesigned and
modernized to secure a mass production of high-quality
magnetic tape copies. There are no references.

Goldberg, O.A., and S.V. Shil'gin.   Magnetic Reverberation   93
Chamber
The authors explain the basic methods of obtaining the
reverberation effect by magnetic tape recording. They
list the main characteristics of the reverberator, designed
and developed by VNAIZ, which is now successfully being
employed in many organizations. At present the Institute
is developing a new model of a remote-controlled magnetic
reverberator for lot production. There are 28 references:
13 English, 8 Soviet, 5 German, 2 French, and 1 Hungarian.

Langen, A.M., and M.I. Onatevich.   Investigation of External 122
Electromagnetic Stray Fields Caused by Electric Motors in
Sound Recording Equipment
The authors discuss special problems of design, selection,
and application of electric motors of various types for
sound recording equipment. They investigate the methods
used for eliminating the effects of a-c electromagnetic
stray fields. Materials concerning the effects of d-c
electromagnetic stray fields will be published later. There
are 4 Soviet references.

LANGEN, A.M.

6(5)

PHASE I BOOK EXPLOITATION SOV/1930

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zvukozapisi

Trudy...Vyp. 2. (Transactions of the All-Union Sound-recording Scientific Institute) Nr 2. Moscow, 1957. 164 p. Errata slip inserted. 1,000 copies printed.

Editorial Board: L.F. Apollonova, V.S. Vaymborn, D.P. Vasilevskiy, A.I. Vroblevskiy, S.A. Gribkov, L.G. Grigorash, B.Ya. Kanacher, V.I. Parkhomenko, L.A. Puset, Ye.I. Reginer, M.A. Rozenblat; Tech. Ed.: S.A. Gribkova.

PURPOSE: This collection of articles may be useful to scientists, engineers, specialists, and technicians dealing with sound-recording techniques.

COVERAGE: The articles are the results of research carried out at VNAIZ in 1954-1955. Most of the articles deal with magnetic recording, both for the recording of sound as well as for fixing various physical processes on tape, wire, disc, or drum. References appear separately after each article.

AVAILABLE: Library of Congress

Card 3/3

LANGEN, A.M.; ONATSEVICH, M.A.

Investigating the external electromagnetic scattering fields from
electric motors of sound recording devices. Trudy VNAIZ no.2:122-130
'57.   (MIRA 12:3)
          (Magnetic recorders and recording--Noise)
          (Magnetic fields)

LANGEN, A.M.

Selecting the type and parameters of drive motors for magnetic sound recorders used in radiobroadcasting and equipped with three motors.
Trudy VNAIZ no.2:131-142 '57. (MIRA 12:3)
(Magnetic recorders and recording--Electric driving)

LANGEN, A.M.

Synchronous two-speed drive motor for magnetic sound recorders used
in radiobroadcasting. Trudy VNAIZ no.2:143-148 '57. (MIRA 12:3)
     (Magnetic recorders and recording--Electric drive)

AUTHOR:
Langer., Aleksandr ... lovich, Candidate SOV/ 161 ... -1-29/33
of Technical Science., Senior ... Assistant at
the Scientific Research institute o.. ... Recor ...

TITLE:
Application of Hysteresis Motors in Sound Recording
(Primeneniye gisterezisnykh dvigateley v zvukozapisi)

PERIODICAL:
Nauchnyye doklady vysshey shkoly, Elektromekhanika i avtomatika,
1958, Nr 1, pp. 234 - 242 (USSR)

ABSTRACT:
In this institute the possibilities of increasing the
electro-mechanical resistance of hysteresis rotors were
investigated, In the course of these investigations test
motors with a squirrel-cage rotor and with a copper-plated
rotor were developed. The introduction of copper into the
rotor resulted in an increase of the starting-up moment and
of the electro-mechanical resistance. At the same time this
caused a reduction of the maximum moment at synchronous speed.
As no method of computation has hitherto been known the deve-
lopment of motors with optimum parameters was greatly obstructed.
For this reason parallel to the tests also attempts were made
to develop an approximative method of computation for hysteresis
motors. Some of the elements of this computation are given.

Card 1/4

Application of Hysteresis Motors in Sound   SOV, 161-58-1-29/33

Recording

This method is based upon the equivalent circuit diagram and upon the formula for the moment of the hysteresis motor which was suggested by D.Panov in his dissertation (Ref 1). The equivalent cicuit diagram has already been described in publications of the Chair of Electric Equipment of Aeroplanes and Automobiles at the Moscow Institute of Power Engineering. In this paper only formula (1) for the moment is examined. If the degree n for the hysteresis loop is known the sin γ can be obtained in a very simple manner from formula (7) when the quantities B_m, B_2, H_m, H_c are known. γ denotes the mean value of the angle of phase shift between the induction and the field strength in the rotor. The diagram showing the function $\mu_{relative}$ versus $f(h_m)$ is recommended for the determination of n for various values of n. The optimum thickness of the effective layer is determined. Two cases are distinguished according to the constructions available at present: 1) The effective layer is mounted on a non-magnetic

Card 2/4   basis. Formula (14) for the optimum thickness of the effective

Application of Hysteresis Motors in Sound   SOV/161-58-1-29/33
Recording

layer is deduced. It was checked with many test-motors. The
values obtained by computation agree with the experimental
results. 2)The effective layer is mounted upon a magnetic
basis. Formula (23) is deduced. The values computed according
to this formula also agree with experimental results. The
sequence of formulae in the computation of the motor is
exposed. The optimum ratio of the pole pitch and of the length
of the machine and the preliminary volume of the rotor can be
obtained by computing a few variants. (At present no information
concerning these problems has been published. There are 5
figures, 1 table, and 2 references,   which are Soviet.
The publication of this article was recommended by a resolution of
the Scientific-Technical Conference on Hysteresis Motors held at
the Moscow Institute of Power Engineering on March 28-29, 1957
(Nauchno-tekhnicheskaya konferentsiya po gisterezisnym dvigatelyam,
provedennaya v MEI 28-29 marta 1957 g.).

Card 3/4

ASSOCIATION: NII zvukozapisi (Scientific Research Institute of Sound Recording)

SUBMITTED: February 12, 1958

Application of Hysteresis Motors in Sound   SOV 161 -58-1-29/33
Recording

Card 4/4

LANGEN. A M

110-1-15/19

AUTHOR: Langen, A.M., Candidate of Technical Sciences

TITLE: On the Vibration of Low-power Induction Motors (O vibratsii
asinkhronnykh dvigateley maloy moshchnosti)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Vol.29, no.1,
pp. 72 - 75 (USSR).

ABSTRACT: The object of this article is to make recommendations
about the measurement of vibration in small induction motors.
The main sources of alternating forces in a single-phase motor
are: higher harmonics in the curve of m.m.f; higher harmonics
in the current and voltage wave forms; tooth harmonics;
ellipticity of the rotating magnetic field; and mechanical and
electrical defects of the machine. The influence of these
different factors on the stability of the motor speed is examined
briefly.
An expression is given for the harmonics in the m.m.f. curve
and another expression for the frequency of pulsation of the
torque. It is shown that each harmonic in the voltage wave form
causes vibrations of very varied frequencies. Tooth harmonics
have little influence on the uniformity of rotation of small
motors and are mainly important because they give rise to noise.
The relationship between the amplitude of vibration and the
width of the rotor-slot air-gaps is given in Table 1 as average

Card1/3

On the Vibration of Low-power Induction Motors   110-1-15/19

values for a number of motors.
The commonest mechanical defects are unbalance of the rotor
and radial play in the bearings. Experimental determinations
of the vibration of different small motors were made in the
Institute of Sound Recording. The method of test is briefly
described and some of the results are given in Table 2. It is
concluded that in low-power single-phase motors appreciable
vibrations are observed at only three frequencies: at the
frequency of rotation; at twice supply frequency; and at twice
slip frequency. All the disturbing forces, except mechanical
unbalance, act in a plane perpendicular to the axis of rotation
and cause torsional oscillations. In the Institute of Sound
Recording, Engineer V.G. Kondrat'yev devised an instrument to
measure the amplitude of vibration at the main frequencies,
with which it is quite easy to make production tests on motors.
It is concluded that for a particular type of motor, the ampli-
tude of the forces caused by ellipticity of the rotating field,
and by space and time harmonics, should be constant; the most
probable causes of differences in the vibration of nominally
identical motors are: (a) at rotation frequency - rotor unbalance
and radial play in bearings; (b) at twice supply frequency-
radial play in bearings and stator eccentricity; (c) at twice
Card2/3

On the Vibration of Low-power Induction Motors   110-1-15/19

the slip frequency - squirrel-cage defects, bearing play and
rotor eccentricity.
There are 2 figures and 2 tables.

ASSOCIATION: Institute of Sound Recording (Institut zvukozapisi)
SUBMITTED: June 20, 1956
AVAILABLE: Library of Congress
Card 3/3

LANGEN, A.M.; KOZLOV, Ye.D.

Some advantages of an asynchronous motor with an external rotor.
Trudy VNAIZ no.7:62-67 '60.   (MIRA 14:4)
                    (Magnetic recorders and recording)
                        (Electric motors, Induction)

LANGEN, A.M., kand.tekhn.nauk

Two-speed synchronously-reactive electric motor.   Vest. elektropron.
31 no.11:43-44 N '60.   (MIRA 13:12)
                    (Electric motors, Synchronous)
                    (Magnetic recorders and recordings)

LANGEN, A.M. (Moskva)

Special features in the calculation of the synchronous operation of a reactive motor.Elektrichestvo no.9:60-65 S '64.

(MIRA 17:10)

LANGENBAKH A.

LANGENBAKH, A,--"The Problem of Elastic-Plastic Torsion of Rods" Leningrad
   Order of Lenin State U imeni A.A. ZHDANOV, Leningrad, 1955 (Dissertation
   for the Degree of Canidate in Physicomathematical Sciences)

SO: Knizhnaya Letopis', No. 35, 1955

LANGENBAKH, A.

Approximate solution of the biharmonic equation in a
trapezoidal region. Vest. Len. un. 11 no.13:119-123 '56.

(MLRA 9:10)

(Elasticity)

LANGENBAKH, A.

AUTHOR: Langenbach, A.

SOV/20-121-2-5/53

TITLE: On the Application of the Variation Principle for Some Nonlinear Differential Equations (O primenenii variatsionnogo printsipa k nekotorym nelineynym differentsial'nym uravneniyam)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 2, pp 214-217 (USSR)

ABSTRACT: The operator equation

(1)
$$Pu = f,$$

where P is a nonlinear operator in the Hilbert space H and $f \in H$ is a given element, has to be solved. Let P be defined on a linear set M, the solution is sought in an other linear (in H dense) set $M_0 \subset M$.

Theorem 1: Let A) $P(0) = 0$; let the differential of Gateaux $P'(x)y$ exist for all $x, y \in M$, let it be linear in y and let it be continuous as an element of H in every plane through y. B) $(P'(x)h_1, h_2) = (P'(x)h_2, h_1)$ for $x \in M$; $h_1, h_2 \in M_0$. C) $(P'(x)h, h) > 0$ for $x \in M$, $h \in M_0$, $h \neq 0$. If under these conditions there exists a solution of (1) in M_0, then 1) the solution is unique, 2) the integral

(2)
$$\phi(u) = \int_0^1 (Ptu, u)dt - (f, u)$$

Card 1/3

On the Application of the Variation Principle for Some Nonlinear   SOV/20-121-2-5/53
Differential Equations

is minimal for this solution, 3) reversely: every u M_0 for which

(2) becomes minimal is a solution of (1).

Theorem 2: Let the conditions A),B) of theorem 1 and

D) $(P'(x)h,h) \geqslant \gamma^2 \| h \|^2$ be satisfied for all $x \in M$, $h \in M_0$. Then

$\phi(u)$ is bounded from below. Every minorizing sequence converges
in the metric of the H.

The boundary value of a minorizing sequence is called a
generalized solution of (1).

Theorem 3: The generalized solution of (1) is determined
uniquely, i.e. all minorizing sequences of $\phi(u)$ have the same
boundary value in H.

Let the functional $\phi(u) = F(u)+lu$ be defined on a linear set N
of H.

Theorem 4: Let the following conditions be satisfied:

1) let lu be a linear functional defined on H.

2) $F(u) \geqslant \gamma^2 \| u \|$ for $u \in N$.

3) $F(2u) \leqslant kF(u)$, k-const, $u \in N$; $F(0) = 0$, $F(-u) = F(u)$.

4) $\varphi(u,v) = \frac{1}{2} \phi(u) + \frac{1}{2}\phi(v) - \phi(\frac{u+v}{2}) = \frac{1}{2} F(u) + \frac{1}{2} F(v) - F(\frac{u+v}{2})$

$\geqslant F(\frac{u-v}{2})$, $u,v \in N$.

Card 2/3

On the Application of the Variation Principle for Some
Nonlinear Differential Equations   SOV/20-121-2-5/$

5) From $F(u-v) \to 0$ there follows $|F(u)-F(v)| \to 0$, $u,v \in N$.
Then there exists a metric space $R \in H$ on which $\phi(u)$ reaches
a maximum. $\phi(u)$ is continuous on R and N is dense in R.
The author gives three examples of the theory of elasticity in
which P is a differential operator.
There are 5 references, 4 of which are Soviet, and 1 American.

ASSOCIATION: Universitet imeni Gumbol'dta, Berlin, Germanskaya Demokraticheskaya
Respublika (Humboldt University, Berlin, German Democratic Republic)
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Card 3/3

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S/043/61/000/001/003/010
C111/C222

AUTHOR: Langenbakh, A.

TITLE: On some nonlinear operators of the theory of elasticity in the Hilbert space

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1961, 38-50

TEXT: Some nonlinear functional equations the operators of which have a positive definite linear Gateaux's differential in the Hilbert space are investigated. Such equations are reduced to a certain variational problem. The problem has a solution in a suitable extension of the original domain of the operator. The results are applied to some problems of the theory of plasticity. The author considers the equation

$$Pu = f,$$

where P -- nonlinear differential operator, f -- a function given in the finite region Ω. On the boundary S of Ω let the linear homogeneous boundary conditions

$$\Gamma_i u = 0; \quad (i=1,2,\ldots,n)$$

be prescribed. Let f be an element of a Hilbert space $H(\Omega)$. Let M be a

Card 1/6

20761

On some nonlinear operators...

S/043/61/000/001/003/010
C111/C222

linear set of functions of H for which $P(M) \subset E$; let M_o be the subset of that function of M for which (2.2) is satisfied.

Theorem 1: Let

a) M^O be dense in $H(\Omega)$; let the Gateaux-differential exist for $P'(x)y$ for all $x,y \in M$, let it be linear in y, and as an element of H let it be continuous in every two-dimensional plane through the point x; $P(0) = 0$.

b) $(P'(x)h_1,h_2) = (P'(x)h_2 h_1)$ for $x \in M$; $h_1,h_2 \in M^O$.

c) $(P'(x)h,h) > 0$ for $x \in M$; $h \in M^O$; $h \neq 0$.

If here there exists a solution of $Pu = f$, $u \in M^O$ then

1) it is unique;

2) it gives a minimum to the functional

$$\phi(u) = \int_0^1 (Ptu,u)dt - (f,u) \qquad (3.2)$$

3) reversely: an element of M^O giving a minimum to (3.2) satisfies (1.2).

If in theorem 1 it is additionally demanded

d) $(P'(x)h,h) \geq \gamma^2 \|h\|^2$ for all $x \in M$, $h \in M^O$; $\gamma = $ const, then on M^O (3.2)

Card 2/6

20761
S/043/61/000/001/003/010
C111/C222

On some nonlinear operators...
is bounded from below. ·

Let $u_k, u_l \in M^0$ and

$$\mathcal{S}_P(u_k, u_l) = \frac{1}{2}\,\phi(u_k) + \frac{1}{2}\,\phi(u_l) - \phi(\frac{u_k + u_l}{2}). \qquad (1.3)$$

Theorem 2: Let $\{u_n\}$ be a minimal sequence of $\phi(u)$. Then $\mathcal{S}_P(u_k, u_l) \to 0$ for $k, l \to \infty$.

Definition: The limit value of the minimal sequence of $\phi(u)$ the existence of which was stated in theorem 2 is·called a generalized solution of (1.2),(2.2).

As examples for the application of these results the author considers:
The problem of the elastic-plastic torsion of a massive bar

$$P_T F \equiv - \frac{\partial}{\partial x}\left\{f\left[T^2(F)\right]\frac{\partial F}{\partial x}\right\} - \frac{\partial}{\partial y}\left\{f\left[T^2(F)\right]\frac{\partial F}{\partial y}\right\} = \omega;\quad T^2(F) = (\mathrm{grad}F)^2 \qquad (1.4)$$

$$F\big|_s = 0, \qquad (2.4)$$

where $F = F(x,y)$ is the tension potential, and the function $f(T^2)$ is two times continuously differentiable. The author proves the existence

Card 3/6

20761

On some nonlinear operators...

S/043/61/000/001/003/010
C111/C222

and uniqueness of the generalized solution.
The creeping of a plate which is clamped along the boundary, for the
bending $w(x,y)$ leads to

$$P_{11}w \equiv \frac{\partial^2}{\partial x^2}\left\{g\left[H^2(w)\right]\left(\frac{\partial^2 w}{\partial x^2}+\frac{1}{2}\frac{\partial^2 w}{\partial y^2}\right)\right\}+\frac{\partial^2}{\partial y^2}\left\{g\left[H^2(w)\right]\left(\frac{\partial^2 w}{\partial y^2}+\frac{1}{2}\frac{\partial^2 w}{\partial x^2}\right)\right\} \div$$

$$+\frac{\partial^2}{\partial x \partial y}\left\{g\left[H^2(w)\right]\frac{\partial^2 w}{\partial x \partial y}\right\}=p(x,y), \qquad (8,4)$$

$$w|_s = 0; \quad \frac{\partial w}{\partial n}\Big|_s = 0. \qquad (9,4)$$

where $H^2(w) = \left(\frac{\partial^2 w}{\partial x^2}\right)^2+\left(\frac{\partial^2 w}{\partial y^2}\right)^2+\frac{\partial^2 w}{\partial x^2}\frac{\partial^2 w}{\partial y^2}+\left(\frac{\partial^2 w}{\partial x \partial y}\right)^2$ and $p(x,y)$ is the

pressure on the surface. Here the author uses the nonlinear connection

$$T = 2g(\Gamma^2)\Gamma, \qquad (1,1)$$

between the T-intensity of the tangential stresses and Γ- intensity of
the shearing deformations. If reversely

$$\Gamma = 2f(T^2)T \qquad (2.1)$$

Card 4/6

20761

S/043/61/000/001/003/010
C111/C222

On some nonlinear operators...

then it is assumed that

$$\infty > C \geqslant g(\Gamma^2) \geqslant c > 0, \qquad (3.1)$$

$$\infty > \frac{1}{4c} \geqslant f(T^2) \geqslant \frac{1}{4C} > 0 \qquad (4.1)$$

are satisfied. It is shown that under the assumption (3.1) and

$$\frac{dT}{d\Gamma} = g(H^2) + 2g'(H^2)H^2 \geqslant \varkappa > 0, \quad \varkappa = const, \qquad (12.4)$$

the problem (8.4)-(9.4) has a unique generalized solution.
An analogous result is obtained for the plane state of tension of an elastic-plastic medium. Theorem 4 asserts that if the curve $T(\Gamma)$ is sufficiently smooth, increasing and satisfies (3.1) then the three mentioned examples have a unique generalized solution.
Theorem 5 asserts that if the assumptions of theorem 4 are satisfied then the energy functionals which correspond to the functional (3.2) in each of the problems have a minimum on the generalized solutions in the corresponding Hilbert spaces.

Card 5/6

20761

S/043/61/000/001/003/010
C111/C222

On some nonlinear operators...

The author mentions S.L.Sobolev, G.Yu.Dzhanelidze, A.I.Koshelev and L.M.Kachanov.
There is 1 figure and 5 Soviet-bloc references.

Card 6/6

SHOYKHET, L.A., kand.tekhn.nauk; LANGENBAKH, I.I., inzh.

Automatic control of the driving of the ShBM-2 cutter-loader, along
a given profile. Avtom.i prib. no.2:97-112 '61.   (MIRA 14:12)
(Mining machinery) (Automatic control)

LANGENBAKH, I.I.

Mechanism for measuring the rigid three-dimensional trajectory
of a movement. Teor. mash. i mekh. no.96/97:28-37 '63.

(MIRA 17:1)

LANGENBAKH, I.I.

Theory of automatic devices used for measuring the deflection angles
of objects moving on a guide. Avtomatyka no.2:31-43 '56.(MLRA 9:10)

1.Institut girnichoi spravi imeni M.M.Fedorova Akademii nauk URSR.
(Automatic control) (Mining machinery)

LANGENBAKH, I.I.

Determining the position coordinates of instruments displaced
along the guide. Avtomatyka no.4:19-28 '56.   (MLRA 10:2)

1. Institut girnichoi spravi im. M.M. Fedorova AN URSR.
   (Automatic control) (Mining machinery)

LANGENBAKH, I.I.

AUTHOR: Lanhenbakh, I.I. (Langenbakh, I.I.)   SOV/102-58-3-5/10

TITLE: A Difference Theory of Automatic Instruments for Recording
          Path-Length Traversed. (Riznytseva teoriya avtomatychnykh
          pryladiv dlya zapysu proydenoho shlyakhu.)

PERIODICAL: Avtomatika. (Kyiv), 1958,   Nr 3, pp.65-73 (USSR)

ABSTRACT: The problem to which this paper ultimately relates is
          that of recording distances along curved tracks underground
          (in mines) or elsewhere.   It is assumed that the curves
          have no cusps, and that their derivatives are continuous;
          two- and three-point contact instruments are considered.
          The scale of any curvature is assumed much larger than the
          base length of a two-point instrument. Any curved section
          is assumed to approximate very closely to a circle within
          the base length of a three-point instrument. Para.2 deals
          with the two-point case; Fig.2 is the structural system
          of such an instrument. Para.3 deals with the three-point
          case; Fig.4 replaces Fig.2. Para.4 deals with the case
          where the links are equal (a = b in Fig.3). Fig.5 is
Card 1/2   the structural system. Para.5 deals with a system in which

A Difference Theory of Automatic Instruments for Recording Path-Length Traversed.

SOV/102-58-3-5/10

one position memory is used (a = b), and Para.6 with an actual system (with the kinematic system of Fig.8). The summators, division mechanism, distance and slope transducers etc. are briefly described. Some other types are mentioned in para.7. The types of integrators and other units required are considered in the conclusions. There are 8 figures and 7 references, of which 6 are Soviet and 1 German.

ASSOCIATION: Instytut hirnichoy sprav y im. M.M. Fedorova AN URSR (Institute of Mining Inspectorate im. M.M. Fedorov, Academy of Sciences, Ukr.SSR.).

SUBMITTED: January 25, 1957.

Card 2/2

SHOYKHET, L.A., kand. tekhn. nauk; LANGENBAKH; I.I., inzh.

Automatic control for directing cutter loader movements. Ugol'
Ukr. 3 no.8:31-33 Ag '59.   (MIRA 12:12)

1. Institut avtomatiki Gosplana USSR.
               (Coal mining machinery) (Automatic control)

SHOYKHET, L.A.; LANGENBAKH, I.I.

Design of mechanical controlling devices of a "Dobas-1" cutter-
loader. Sbir. prats' Inst. hir. spravy AN URSR no.6:52-67 '60.
(MIRA 13:9)
(Coal mining machinery)

SHOYKHET, L.A., kand.tekhn.nauk; LANGENBAKH, I.I., inzh.; KOZAR', V.A., inzh.

Automatic load regulators for mining machinery motors.
Ugol' Ukr. 4 no.2:29-30 F '60.   (MIRA 13:6)

1. Institut avtomatiki Gosplana USSR.
       (Automatic control) (Mining machinery)

MATVEYEV, K.I.; LANGENBEK, V.; OSIPOV, A.M.; KRAUZE, G.V.; KROYTSFEL'D, G.I.

o-Quinone chelates containing Cu (II) and Fe(III) ions as hydroxylating and oxidizing agents. Organic catalysts. Part 76: Catalytic activity of o-quinones. IX. Kin. i kat. 6 no.4:651-657 Jl-Ag '65.   (MIRA 18:9)

1. Institut organicheskogo kataliza Germanskoy AN, Rostok, Germanskaya Demokraticheskaya Respublika, i Institut kataliza Sibirskogo otdeleniya AN SSSR.